considerably weaker than Bradley's subgenera *Notoplaniceps* and *Neoplaniceps*. In my opinion *Odontaporus* Bradley, along with *Melanaporus* Ashmead, which is an earlier name for the same group, should be placed in the synonymy of *Aporus*, subgenus *Aporus*.

A New Schendylid from the Eastern United States, with Notes on Distribution and Morphology. (Chilopoda: Geophilomorpha: Schendylidae)

By Ralph E. Crabill, Jr., Smithsonian Institution, Washington, D. C.

The chilopod fauna of the central and southern Appalachians, including parts of the adjacent Cumberland Plateau, seems to be comprised of several rather distinct components. Apart from recent artificial introductions and endemic elements of uncertain geographical affinity, two fairly heterogeneous factions stand out, groups having an affinity with eastern Asia and, or, northwestern America, and those with an affinity with the southwestern United States, and, or, lands to the south, principally Mexico.

The implication is that this area in the southeastern United States today shows the influence of earlier faunal movements, on the one hand, from the south, and on the other, from the American northwest, and ultimately from Asia.

Examples of the northwestern and Asian contribution are found in the following: *Strigamia, Arctogeophilus, Geophilus, Escaryus, Scolopocryptops* (except *gracilis*), *Zygethobius, Zygethopolys, Bothropolys,* and perhaps the majority of the Lithobiidae (*sens. str.*). A southern derivation is suspected for some of the species of: *Gosiphilus, Arenophilus, Nyctunguis, Scolopocryptops* (*gracilis*), *Scolopendra* (*viridis* and *polymorpha*), *Theatops, Cryptops,* all of the Gosibiidae and Watobiidae, a few Lithobiidae such as *Neolithobius* and *Enarthrobius,* and some Henicopidae, notably *Lamyctes* and *Buethobius.* I do not mean to imply that a given group arose, was evolved, in either region —although some must have been—but merely that both regions

independently and probably at different times contributed to the existing centipede fauna of the lower Appalachians and adjacent areas.

To the southern component belongs the present new species, *Nyctunguis pholeter,* whose known congeners are especially characteristic of the North American southwest and Mexico. Apart from this rich fauna, two other species are known, one from the Leeward Islands, and another, rather aberrant form from Turkey.

The presence of *Nyctunguis* in the southern Appalachians suggests an ancient dispersal from the south, possibly from Mexico, and perhaps parallels the case of the himantariid *Gosiphilus cuphorion* Crabill, whose closest relatives flourish on the Pacific coast south to Mexico. A third species linking the Cumberland Plateau with the far west is *Zygethopolys atrox* Crabill whose affinities, by contrast, are with the Pacific northwest, Alaska, and Asia.

On the basis of the original description, the Californian *Nyctunguis glendorus* Chamberlin seems most like *pholeter.* Possibly the most important distinctions between the two are: *glendorus,* median labral arc short, about $\frac{1}{3}$ of the labral width, *pholeter,* median arc wider, about $\frac{1}{2}$ the labral width; *glendorus,* dentate lamella in three blocks each with three teeth, *pholeter,* dentate lamella very vaguely divided into two blocks, with two and eight teeth respectively.

Nyctunguis pholeter, new species

Type: ♀; Tennessee, DeKalb County, Cripps' Mill, Cripps' Mill Cave; December 27, 1956; Thomas C. Barr, leg. Deposited in the U. S. National Museum; Myriapoda Type Number 2453.

Total Length: 31 mm. Antennae: Yellow, essentially concolorous with head. The right, normal, 3.5 mm long; proximal 4 articles notably less setose than those remaining. Left, abortive, consisting of 7 abnormally long articles. Cephalic Plate: Yellow; 1.03 mm. long, greatest width 0.83 mm.

Anteriorly rounded, narrowing very slightly posteriorly, sides slightly bowed outward; posterior corners narrowly rounded; posterior margin straight, concealing the prebasal plate. Reticulation moderately strong; vestiture sparse; frontal suture absent. Clypeus: (fig. 1). Reticulation pronounced, the majority of the figures essentially pentagonal; clypeal area absent. Postantennal setae 2; prelabral setae 2, minute (fig. 8); remaining setae disposed in two irregular, subparallel rows as shown. Labrum: (fig. 8). Medial arc relatively wide, its tuberculate teeth (fig. 11, A) numbering 16, these directly meeting adjacent clypeus. Each lateral (i.e., side) piece weakly sclerotized, weakly reticulate antero-medially as shown (fig. 8, D); each indistinctly separated from clypeus proper by an extremely thin strip free of reticulation; lateral teeth numbering 6 and 7 (fig. 8, B), their apices sharply pointed and directed medially. Mandible: (fig. 13). The dentate lamella very inconspicuously divided into two blocks (suppl. note 1), the lower of these with 2, the upper with 8 blunt teeth (fig. 13, B). First Maxillae: (figs. 4, 7). Non-membranous portions prominently reticulate; coxosternum medially without a suture or weakened area, with a pair of long setae on each side of middle; each telopodite with a broad colorless and partially-concealed lappet (fig. 4, A) and each antero-lateral angle with a small, totally-concealed lappet (fig. 4, B) (see suppl. note 2). Second Maxillae: (fig. 7). Claw (fig. 3) rather broad, robust; its dorsal and ventral edges each with a row of delicate hyaline teeth or fimbriae, each of these drawn out into a long, thin point. Bridge-piece broad, strongly reticulate. Prehensors: (figs. 5, 6). Concolorous with prosternum and cephalic plate. When closed, slightly surpassing front margin of head. Sparsely setose, the articles totally without denticles. Claw (ungula) robust, rather short, its posterior edge not serrate or crenulate; poison gland and calyx as shown (figs. 5, 6) (suppl. note 3). Prosternum: (fig. 2). Medial diastema conspicuous, margined on each side by a strong, sclerotized, deeply-pigmented ridge posterior to which is a small field of strong reticulation (fig. 2, A). Chitin-lines absent, but each lateral suture (i.e., coxopleural or pro-

sternopleural suture) margined for part of its length by a slight ridge or thickening (fig. 2, B).

STERNITES: (fig. 14). Weakly-defined, non-consolidated and reticulate paxilli (fig. 14, A) on sternites 2 or 3 through 14. Prominent medial, undivided pore-fields (fig. 14, C) on sternites 2 through 22. Very obscure, bilateral pore-fields (fig. 14, B), each consisting of a few scattered and minute pores, present on sternites 1 through the penultimate, there represented by 2 or 3 pores on each side. LEGS: 51 pairs. Each pretarsus with a pair of relatively prominent lateral non-articulated bristles (spines), these long, pointed, extremely thin (fig. 9) (suppl. note 4). ULTIMATE PEDAL SEGMENT: (fig. 10). Sternite broad, sides converging slightly toward truncate posterior edge. Coxopleural pores of the homogenous type (i.e., without inclusive canals and multiple discrete glands); each elongate, partly concealed by the sternite. Left leg (excluding coxopleuron) 1.27 mm. long, 1.3 × the length of penultimate leg, each ultimate pretarsal claw strong, curved, deeply pigmented; setae long, sparse. Anal pores (of terminal segment) absent. TERGITES: First pedal and ultimate pedal yellow, those remaining yellowish-white; bisulcate; very sparsely clothed with rather long setae; ultimate pedal pretergite laterally undivided, fused with its pleurites. PLEURAL REGION: (fig. 12). Series 4 alpha and beta absent; series 5 absent (suppl. note 5).

SUPPLEMENTARY NOTES

1. MANDIBLE. The cleft in the dentate lamella is sufficiently obscure to be overlooked easily, and in fact it may even be an artifact, as may be its counterparts in a number of the cases noted in the literature. Though the question of whether or not a given schendylid dentate lamella is divided or not seems important, in my opinion (and at this time) the significance for systematics of the number and kind of divisions has yet to be demonstrated.

2. 1ST MAXILLARY LAPPETS. Attems (in Das Tierreich, Lief. 52, p. 87, 1929) describes the known members of *Nyctun-*

guis as lacking 1st maxillary lappets, possibly because (1) he had never directly studied a specimen, or (2) they had never been ascribed to any species in the literature, or (3) perhaps because Verhoeff's figure of the maxillae of *N. dampfi* suggests them to be absent. In addition to *pholeter,* I have examined several Californian congeners and have found well-developed, though frequently concealed, lappets in all cases.

3. Sensilla Basiconica of the Ungula. Microscopic examination of the claws of the prehensors and 1st maxillae discloses the presence of numerous minute canals extending through the exoskeleton and connecting the body surface with its interior. Having observed them in all of the chilopod orders, I was at a loss to imagine their function, unless they were glandular canals of some sort. However, S. L. Tuxen of Denmark seems indirectly to have explained their presence correctly. In the course of his study of similar canals in the chelicerae of a solpugid, he observed that each is capped by a minute hyaline cone and therefore suggested that they are sensory in nature and probably chemoreceptors. Subsequently I found the same hyaline cones in centipedes. These structures then are probably the modified counterparts of the sensilla basiconica of insects.

4. Pretarsal Accessory Spines. I have found the same remarkably large pretarsal accessory spines in several Pacific coast members of the genus, though in these they are more prominent than in *pholeter,* being darker and heavier. I have observed such *conspicuous* accessory spines in no other Geophilomorpha, nor have I read of them in connection with any other species, with the possible exception of the Neogeophilidae. Their presence, especially in a schendylid, may actually be quite meaningful, since they may be homologous with the pretarsal accessory (articulated) *spurs* of the more primitive orders, e.g., Lithobiomorpha and Scolopendromorpha. If this is so, then they represent still another primitive feature testifying to the evolutionary conservatism of the Schendylidae within the Geophilomorpha.

5. The Pleural Region. The system of pleurite nomenclature used here is that of Broelemann. It is explained in

Faune de France, 25: 45, 1930; examples of its use may be found in Broelemann and Ribaut, Nouv. Arch. Hist. Nat., Paris (5) 4: 53–183, 1912. In addition to one other work by a different author, their "Essai d'une Monographie des Schendylina" in my opinion still stands as one of the two most detailed, orderly, best illustrated, and in some ways most searching preliminary analysis ever accorded a group of centipedes during the hectic history of their study.

Slide Preparation with Hoyer's Mountant

It has been my experience that treating the delicate mouthparts in weak KOH or even in the gentler NaOH too often results in the distortion or partial (or complete) destruction of certain critical structures such as the labral teeth and fimbriae, parts of the maxillae, and the prehensorial ungula. This prob-

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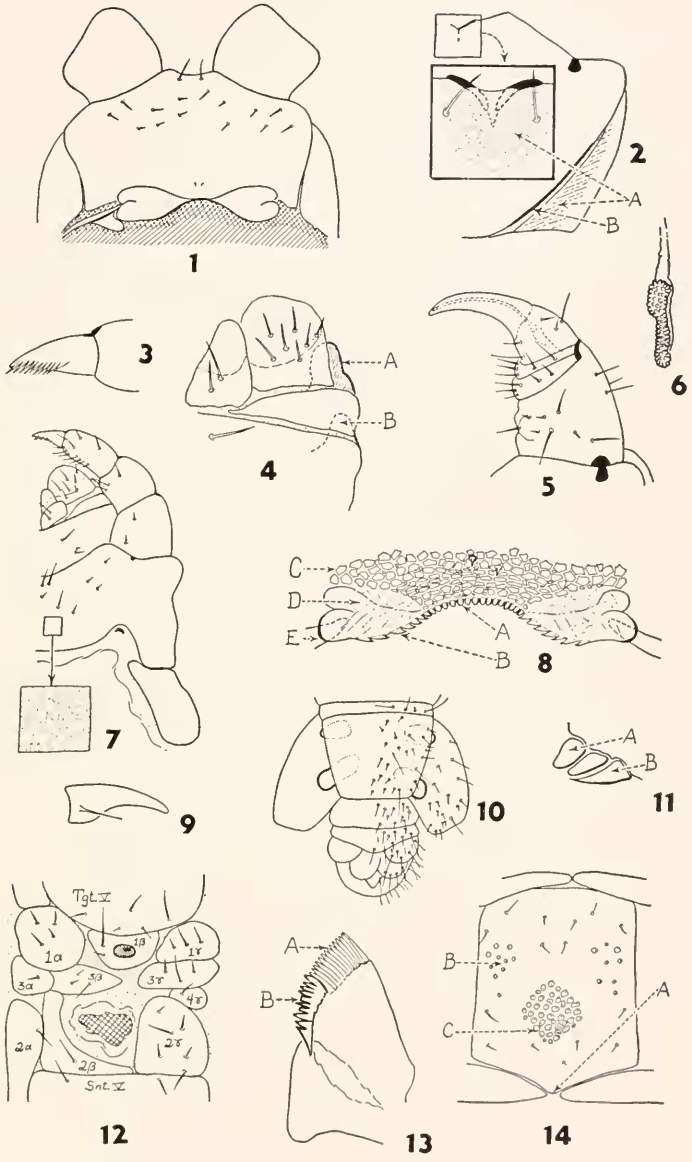
Explanation of Figures

1. Clypeus. Labrum schematic; all clypeal setae shown.
2. Prosternum. (Ventral, left half.) Anterior diastema with thickenings shown in inset. A, areas of prominent reticulation, weakly sclerotized. B, thickened edge of prosternal suture.
3. 2nd maxillary claw. (Left.)
4. 1st maxillae. (Left half.) A, lappet of telopodite. B, concealed lappet of coxosternum.
5. Left prehensor. (Ventral.) Poison canal and calyx outlined in dashes; larger setae shown.
6. Poison calyx of left prehensor.
7. 1st and 2nd maxillae. (Left half.) Prominent reticulation of bridge-piece shown in inset; larger setae included.
8. Labrum. A, medial arc. B, right lateral piece. C, typical strong, distinct reticulation of lower clypeus. D, weakly sclerotized, weakly reticulate upper portion of labrum. E, heavily sclerotized, non-reticulate corner of labrum; fulcrum shown in dashes.
9. Pretarsal claw of right first leg.
10. Ultimate pedal and succeeding segments. (Ventral.) Prominent setae of left half shown.
11. Representative labral teeth. A, from medial arc. B, from lateral piece.
12. Left eupleurium of 5th pedal segment. The more prominent setae shown. Tgt., tergite; Stn., sternite.
13. Mandible. A, row of simple hyaline teeth. B, dentate lamella of ten teeth, two broken.
14. Fifth sternite. A, paxillus of metasternite. B, weakly defined right lateral pore-field. C, prominent medial pore-field. The more prominent setae shown.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lem may usually be resolved through the use of Hoyer's mounting medium, a semi-permanent (though possibly permanent) mountant that is gaining an increasing following among zoologists.

It offers a number of desirable advantages apart from its ability to preserve and clear without distortion or destruction. Parts may be transferred to it directly from alcohol, water, or glycerine without preliminary treatment. It permeates the specimen rapidly and thoroughly, clearing it beautifully at the same time. It neither discolors with age nor crystallizes. It may be thinned with distilled water repeatedly.

As to procedure, one simply covers the object with the mountant in the usual manner on a microscope slide and then applies a plain or supported cover glass. *Gentle heating for one to two hours* is most desirable as it speeds clearing, insures uniform penetration without the formation of internal bubbles, and hastens hardening of the exposed mountant. To counteract the mountant's chief disadvantage, its tendency to shrink, after a day or so ring the preparation with fresh Hoyer's, and when this has set, ring it once or twice with some standard ringing mixture, such as murrayite.

As to permanency, slides of mites prepared with Hoyer's in this museum twenty years ago remain in perfectly acceptable condition today. The formula is as follows:

distilled water	50 ml.
gum arabic	30 grams
chloral hydrate	200 grams
glycerine	20 grams

The materials go into solution slowly, so that intermittent stirring over a period of several days is often necessary. Mix in the order given.